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spectrum signal, to generate, within each symbol-duration segment of the plurality of symbol-duration segments, a plurality of sample values occurring at a plurality of sample times, respectively;

detecting, for each symbol-duration segment, from the plurality of sample values, a largest value, thereby generating a plurality of largest values corresponding to the plurality of symbol-duration segments, respectively;

determining, from the plurality of largest values, a plurality of time instants, respectively, within each symbol-duration segment, corresponding to the plurality of largest values, with each time instant occurring at one of the plurality of sample times within the symbol-duration segment;

determining, from the plurality of time instances, a synchronization time; and

verifying the synchronization time.

18. ~~23~~. The method as set forth in claim 17 ~~22~~, with the step of determining the correct sample time at which the spread spectrum signal is correctly despread, including the step of determining, from the plurality of time instances, using any of a predetermined number of coincidences of largest values OR a maximum number of occurrences of largest values, the correct sample time at which the spread spectrum signal is correctly despread.

19. ~~24~~. The method as set forth in claim 17 ~~22~~ or 18 ~~23~~, further

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comprising the step of despreading, using the correct sample time at which the spread spectrum signal is correctly despread, a multiplicity of data symbols.

20. ~~25~~. A method, using a processor, for acquiring synchronization to a spread-spectrum signal having a plurality of symbols, with each symbol of the plurality of symbols spread-spectrum processed by a plurality of chips, with the plurality of chips occurring at a plurality of chip times, respectively, comprising the steps of:

filtering, during a plurality of symbol-duration segments, with a filter having an impulse response matched to the plurality of chips for each symbol duration segment, the spread-spectrum signal, to generate, within each symbol-duration segment of the plurality of symbol-duration segments, a plurality of sample values occurring at a plurality of sample times, respectively;

detecting, for each symbol-duration segment, from the plurality of sample values, a set of largest values, thereby generating a plurality of sets of largest values corresponding to the plurality of symbol-duration segments, respectively;

determining, from the set of largest values, a set of time instants, respectively, within each symbol-duration segment, corresponding to the set of largest values, with each time instant occurring at one of the plurality of sample times within the symbol-duration segment;

determining, from the plurality of time instances, a

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synchronization time; and

verifying the synchronization time.

21. ~~26~~. The method as set forth in claim 20 ~~25~~, with the step of determining the synchronization times including the step of determining, from the plurality of time instances, using any of a predetermined number of coincidences of largest values OR a maximum number of occurrences of largest values, the synchronization times.

22. ~~27~~. The method as set forth in claim 20 ~~25~~ or 21 ~~26~~, further comprising the step of despreading, using the synchronization times, a multiplicity of symbols.

23. ~~28~~. The method as set forth in claim 20 ~~25~~, with the step of detecting, further including the step of detecting, for each symbol-duration segment, from the plurality of sample values, at least four largest values, thereby generating a plurality of largest values corresponding to the plurality of symbol-duration segments.

24. ~~29~~. A method, using a processor, for acquiring synchronization to a spread-spectrum signal having a plurality of symbols, with each symbol of the plurality of symbols spread-spectrum processed by a plurality of chips, with the plurality of chips occurring at a plurality of chip times, respectively, comprising the steps of:

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correlating, during a plurality of symbol-duration segments, the spread-spectrum signal with reference signals, to generate, within each symbol-duration segment of the plurality of symbol-duration segments, a plurality of sample values;

detecting, for each symbol-duration segment, from the plurality of sample values, a largest value, thereby generating a plurality of largest values corresponding to the plurality of symbol-duration segments, respectively;

determining, from the plurality of largest values, synchronization time; and

verifying synchronization time.

25. ~~30~~. The method as set forth in claim 24 ~~29~~, with the step of determining the synchronization time including the step of determining, from the plurality of largest values, using any of a predetermined number of coincidences of largest values OR a maximum number of occurrences of largest values, the synchronization time.

26. ~~31~~. The method as set forth in claim 24 ~~29~~ or 25 ~~30~~, further comprising the step of despreading, using the synchronization time, a multiplicity of symbols.

27. ~~32~~. A method, using a processor, for acquiring synchronization to a spread-spectrum signal having a plurality of symbols, with each symbol of the plurality of symbols spread-spectrum processed by a plurality of chips, with the plurality

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of chips occurring at a plurality of chip times, respectively, comprising the steps of:

correlating, during a plurality of symbol-duration segments, the spread-spectrum signal with reference signals, to generate, within each symbol-duration segment of the plurality of symbol-duration segments, a plurality of sample values;

detecting, for each symbol-duration segment, from the plurality of sample values, a set of largest values, thereby generating a plurality of largest values corresponding to the plurality of symbol-duration segments;

determining, from the plurality of largest values, synchronization time; and

verifying synchronization time.

28. ~~33~~. The method as set forth in claim 27 ~~32~~, with the step of determining the synchronization time including the step of determining, from the plurality of largest values, using any of a predetermined number of coincidences of largest values OR a maximum number of occurrences of largest values, the synchronization time.

29. ~~34~~. The method as set forth in claim 27 ~~32~~ or 28 ~~33~~, further comprising the step of despreading, using the synchronization time, a multiplicity of symbols.

30. ~~35~~. The method as set forth in claim 27 ~~32~~, with the step of detecting further including the step of detecting, for each

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symbol-duration segment, from the plurality of sample values, at least four largest values, thereby generating a plurality of largest values corresponding to the plurality of symbol-duration segments.

~~36~~ 31. A method, using a programmable-matched filter with a spread-spectrum receiver on a received-spread-spectrum signal, the received-spread-spectrum signal having a plurality of packets, with each packet generated from spread-spectrum processing a header-symbol-sequence signal with a header-chip-sequence signal and from spread-spectrum processing a data-symbol-sequence signal with a data-chip-sequence signal, for synchronization comprising the steps of:

generating a replica of the header-chip-sequence signal;

loading said programmable-matched filter with the replica of the header-chip-sequence signal, to set said programmable-matched filter with a programmable-impulse response matched to the header-chip-sequence signal;

despreading, with the programmable-matched filter matched to the header-chip-sequence signal, a header portion of the packet from the received-spread-spectrum signal as a despread-header-symbol-sequence signal;

correlating, with a replica of the header-symbol-sequence signal, the despread-header-symbol-sequence signal to generate a peak-correlation signal; and

despreading, responsive to timing from the peak-

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correlation signal, a data portion of the packet from the received-spread-spectrum signal as a despread-data-symbol-sequence signal.

32.
~~37.~~ A method, using a programmable-matched filter with a spread-spectrum receiver on a received-spread-spectrum signal, the received-spread-spectrum signal having a plurality of packets, with each packet generated from spread-spectrum processing a header-symbol-sequence signal with a header-chip-sequence signal and from spread-spectrum processing a data-symbol-sequence signal with a data-chip-sequence signal, for synchronization comprising the steps of:

generating a replica of the header-chip-sequence signal;

correlating, with the replica of the header-chip-sequence signal, the header-chip-sequence signal embedded is the received-spread-spectrum signal;

despreading, with the replica of the header-chip-sequence signal synchronized to the header-chip-sequence signal, a header portion of the packet from the received-spread-spectrum signal as a despread-header-symbol-sequence signal;

correlating, with the programmable-matched filter matched to the header-symbol-sequence signal, the despread-header-symbol-sequence signal to generate a peak-correlation signal; and

despreading, responsive to timing from the peak-correlation signal, a data portion of the packet from the

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received-spread-spectrum signal as a despread-data-symbol-sequence signal.

33.

~~38~~. A method, using a programmable-matched filter with a spread-spectrum receiver on a received-spread-spectrum signal, the received-spread-spectrum signal having a plurality of packets, with each packet generated from spread-spectrum processing a header-symbol-sequence signal with a header-chip-sequence signal and from spread-spectrum processing a data-symbol-sequence signal with a data-chip-sequence signal, for synchronization comprising the steps of:

generating a replica of the header-chip-sequence signal;

loading said programmable-matched filter with the replica of the header-chip-sequence signal, to set said programmable-matched filter with a programmable-impulse response matched to the header-chip-sequence signal;

despreading, with the programmable-matched filter matched to the header-chip-sequence signal, a header portion of the packet from the received-spread-spectrum signal as a despread-header-symbol-sequence signal;

despreading, with a frame matched filter having an impulse response matched to the header-symbol-sequence signal, the despread-header-symbol-sequence signal to generate a peak-correlation signal; and

despreading, responsive to timing from the peak-correlation signal, a data portion of the packet from the

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